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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/814,346	04/01/2004	Mitsuru Nagata	251362US2	5357
22850	7590	04/14/2005	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.			TON, MY TRANG	
1940 DUKE STREET			ART UNIT	
ALEXANDRIA, VA 22314			PAPER NUMBER	

2816

DATE MAILED: 04/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/814,346

Applicant(s)

NAGATA, MITSURU

Examiner

My-Trang N. Ton

Art Unit

2816

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17 and 18 is/are allowed.
- 6) ☒ Claim(s) 1,3-16 and 19 is/are rejected.
- 7) ☒ Claim(s) 2 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/1/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

Claims 4-8, 11-16, 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 4, it is unclear as to whether "the output data" recited in line 6 is additional or a part of limitation "at least three output data" as cited in line 5.

In claim 5, it is unclear as to whether "the resistor" recited in line 1-2 is additional or a part of limitation "a plurality of resistors" as previous cited in claim 1, line 2.

Claims 6, 8, 12-13, 15-16 are similarly rejected as claim 5.

Claim 7 is similarly rejected as claim 4.

In claims 11, 14, 19, it is unclear as to whether "the output data" recited in line 6 is additional or a part of limitation "at least n+m output data" as cited in line 5.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3 and 9-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Kamikawara (U.S Patent No. 4,683,386).

Kamikawara discloses in Fig. 1 a digital controlled volume attenuator including:

Regarding claim 1:

a resistor unit (17-1-17-L) having a plurality of resistors series-connected between an input terminal (IN) and a predetermined potential terminal (AGND), and a switch group (18-1 – 18-N) including a plurality of switches each having one end connected to a node between the input terminal and the resistor (i.e, 18-1), a node between the resistors (i.e, 18-2 – 18- (N-1)), or a node between the resistor and the predetermined potential terminal (i.e 18-N), and the other end connected to an output terminal (7 via 15); and

a switch control circuit (C1-CN), which supplies a control signal to the switch group (18-1 – 18-N),

wherein an attenuation step is generated by supplying the control signal (C1-CN) to a pair of adjacent switches (18-1 – 18-N) included in the switch group so as to complementarily, periodically turning on/off the pair of switches at a duty of a/b for one switch and a duty of $(b-a)/b$ for the other switch (the switch control circuit (C1-CN) and the switch group (18-1 – 18-N) of Kamikawara is capable of providing the function as recited therein).

Regarding claim 3: because the claimed structure is fully met by Kamikawara, the recited function "turned on/off is smaller than a reciprocal of an audio frequency) will necessarily be inherent in Kamikawara, as held by the court in *In re Best*, 195 USPQ 430.

Claim 9 is similarly rejected as claim 1:

A resistor unit (20) having
first, second , ... (n-1) th resistors (n is an integer of not less than 3) resistors
(17-1 – 17-L) which are series-connected between an input terminal (IN) and a
predetermined potential terminal (AGND), and

first, second, ..., nth switches (18-1 – 18-N) each having one end connected to a
node between the input terminal and one end of the first resistor (18-1), a node between
the other end of the first resistor and one end of the second resistor (18-2), ... , a node
between the other end of the (n-2)th resistor and one end of the (n-1)th resistor (18-3,
18-4, 18-(N-1)), or a node between the other end of the (n-1)th resistor and the
predetermined potential terminal (18-N), and the other end connected to an output
terminal (7 via 15); and

a switching control circuit (C1-CN) which generates a switching control signal for
controlling ON/OFF states of the first, second, ..., nth switches (18-1 – 18-N) and
supplies the switching control signal (C1-CN) to the first, second, ..., nth switches (18-1
– 18-N),

wherein in addition ... turning on only said other switch at a: (b-a) (the first,
second ... (n-1)th resistors, the first, second ... nth switches (18-1 – 18-N) and the
switching control circuit (C1-CN) of Kamikawara is capable of providing the function as
recited therein).

Claim 10 is similarly rejected as claim 3.

Allowable Subject Matter

Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. None of the prior art disclosed or suggested to show the particular structure and/or the particular operation recited in these claims namely: "resistors ... (a and b are positive integers which satisfy $a < b$)." (claim 2).

Claims 4-8, 11-16, 19 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action. None of the prior art disclosed or suggested to show the particular structure and/or the particular operation recited in these claims namely: "a conversion circuit" in combination with "a decoder" (claims 4, 7, 11, 14); "the resistor ... the predetermined potential terminal" (claims 6, 8, 13, 16).

Claims 17-18 are allowable over the prior art of record. None of the prior art disclosed or suggested to show the particular structure and/or the particular operation recited in these claims namely: "a 1st resistor ... a kth resistor having one end connected to the other end of the (k-1)th (k is a positive integer which satisfies $k < n-1$) resistor and one end of the kth resistor" in combination with "1st, 2nd, ... (n-1)th resistors", "first, second nth switches", "a switching control circuit" and "wherein letting x be an attenuation ... and turning on said other switch" as recited in claim 17.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to My-Trang N. Ton whose telephone number is 571-272-1754. The examiner can normally be reached on 7:00 a.m - 5:30 p.m.

Art Unit: 2816

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on 571-272-1740. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



My-Trang N. Ton
Primary Examiner
Art Unit 2816

April 13, 2005